

Bar Clamp Corner Squaring Fixture
Continuance of Application 10/084,786
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Specification of Invention
March 10, 2005

Title of Invention: Bar Clamp Corner Squaring Device

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Specification:

The invention consist of four (4) pieces of metal fabricated to 90 degree corners and is used in conjunction with beam clamp assemblies. Drawings (Figures 1 A and 2A) describing the bar Clamp Corner Squaring Devices in detail are attached

The metal fixtures are made from 1/8" band iron and are welded in the corners and at the base.

The fixtures are 1 1/4" high and each side is 3 1/2" long.

The four (4) corner pieces were designed to be used to hold picture frames, drawers, or any other similar 4 sided assembly in place and in square to allow them to be glued.

Cardboard or paper can be placed over the fixtures to prevent excess glue from getting on the fixtures.

People familiar with this art will be able to use the devices easily.

Cross Reference to Related Applications
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Related U.S. Application Data

Division of applications No. 08/787,971. Jan 23, 1997

Int. Cl.B25B 1/24
U.S. Cl.269/168; 269/282; 269/283; 260/147

Field of Search254/41, 147-149, 254/166-171.5,
203-206, 282,283,279,280,88,45

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Statement Regarding Federally Sponsored Research or Development
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Not Applicable

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Reference to Sequence Listing a Table, or a Computer Program Listing
Compact Disk Appendix
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Not Applicable

Clamp Fixtures
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This is a continuance to application Number 10/084,786, filed on 06/14/2002

Field of the Invention

This invention relates to clamp fixtures of the type used in association with pipe clamps and bar clamps and more particularly to clamping systems which are easily changed to facilitate use of any of a number of different clamping devices which are specifically adapted for clamping certain types of work pieces or other articles.

Background of Invention

Pipe clamp assemblies and bar clamp assemblies hereinafter referred to as beam clamp assemblies. Beam Clamp assemblies are commonly used to hold work pieces or other articles in a fixed position to allow for other operations such as cutting, drilling, nailing, screwing, gluing etc. Beam clamp assemblies usually consist of a linear beam (e.g. pipe, rod, or bar) and a pair of opposing jaws, one of which is fixed to the beam at one location and the other while being attached can be moved by sliding it along the beam. The ability to slide one of the jaws allows for the jaw to apply and relive pressure. Normally the jaws are made in a manner that provides for them to have parallel opposing gripping surfaces. This allows the bar clamping assemblies to clamp work pieces and other items having flat parallel opposing surfaces. However, these clamping devices cannot hold the work pieces or other articles in a square position that is often required. For example, to grip the corner of picture frames specialty configured miter jigs having mitered gripping surfaces have been designed. These specialty jigs have been provided with fasteners that allow the jigs to be attached to the jaws of the beam clamp assembly. These fasteners cause a disadvantage as they require to be attached to a particular type beam assembly and cannot be used interchangeably with the standard beam clam assembly. Other clamping devices also require attachment of multiple jigs to clamp work pieces or other items. This lack of interchangeably and requirement of multiple jigs can be a great disadvantage to workers who must match jigs for a particular job to a particular type of beam clamp assembly which may or may not be available and cause loss of time.

It is desirable that jigs or other fixtures used for clamping be versatile to allow for clamping with out need to attach special jigs to a bar clamping assembly or need to attach multiple jigs to a bar clamp assembly and still be able to hold the work pieces in square. This is extremely important in the assembly of picture frames.

**Bar Clamp Corner Squaring Fixture
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Summary of the Invention
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This invention is unique as it provides adaptors that do not require attachment to the beam clamp assembly but utilize them to clamp work pieces or other items in a square manner. To utilize the functionality of this invention it is required that 4 adaptors be used and 4 beam clamps. The smooth surface minimizes scarring and the strength of the 90 degree welded corned assures that the clamped work piece will be maintained in a square fashion.

The usage of these adaptors provides great flexibility in clamping a myriad of sized work pieces. Changing the length or width to accommodate a large or small size work piece can be done without changing out any specialized clamping fixture. It only requires that the position of the adjustable jaw on the beam clamping assembly be moved.

The adaptors will draw the corners of a frame together and maintain them level which current devices are not capable of doing because they are attached to the jaws on the beam clamping devices which are inherently loose and do not provide a support on the base like the Bar Clamp Corner Squaring Fixture.

If gluing is required, the adaptors can be protected with a piece of paper or cardboard which can be discarded once the work piece has sufficiently cured.

The adaptors are small in size and do not require much storage space as they can be nested.

Brief Description of Drawings
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There are two drawings attached:

Drawings:

Figure 1A: Shows the adaptor separately and on one beam clamp assembly. Provides dimensional information for the adaptors.

The following items are shown on the Drawing

Part #1 - Bar Clamp Top Piece used to adjust pressure and hold the Bar Clamp Corner Squaring fixtures in place.

Part #2 - Bar Clamp Corner Squaring fixtures

Part #3 - Bar for bar clamp

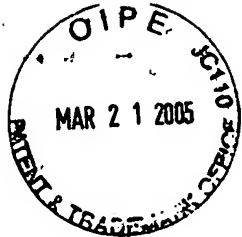
Part #4 - End Clamp for Bar Clamp Fixture

Figure A – Front Profile of the Bar Clamp Corner Squaring fixture.

Figure B – Top Profile of the Bar Clamp Corner Squaring fixture.

Figure C – Angle Profile of the Bar Clamp Corner Squaring Fixture.

Figure 2A: Shows all four adaptors in place and how they would be clamped with four beam clamp assemblies. Detail information on all parts is presented in the Detailed Description of the Invention - page 12.



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Detailed Description of the Invention

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This invention is to be used to hold frames in square while they are being glued. They are very easy to use and do not require any attachment to the jaws of beam clamping devices.

One who is has just ordinary skill in the art of frame making will be familiar enough with the art and will only have to do the following to utilize the functionality of the Bar Clamp Corner Squaring devices. (Refer to Drawing Figure 2A for part number references.)

- 1) Place two beam clamping devices on a flat surface. The beam clamping device consist of a two linear beams (Parts 19 and 20) and two clamping devices (Parts 1 & 2) and two opposing jaws (Parts 13 and 14)
- 2) Set Bar Clamp Corner Squaring devices into the jaws of two beam clamping devices. (Parts 3, 4, 5, 6)
- 3) Insert the frame members that they wish to assemble. (Parts 7, 8, 9, & 10)
- 4) Apply glue to the ends of the frame members (Parts 7, 8, 9, & 10)
- 5) Adjust the beam clamping jaws (Parts 1 & 2) to apply pressure on the assembled frame members.
- 6) Place two additional beam clamping devices perpendicular to the initial ones and adjust by clamping to the beams of the first two devices. The beam clamping device consist of a two linear beams (Parts 17 and 18) and two clamping devices (Parts 11 and 12) and two opposing jaws (Parts 15 and 16)
- 7) Tighten beam clamping devices to ensure that assembled frame is in square.
- 8) Wait a sufficient time period to allow the glue to dry
- 9) Remove beam clamping devices and the Bar Clamp Corner Squaring devices.

The invention ease of use and ability to be used with beam clamping devices without being fastened to them provide it with versatility. Other clamping devices require attachment to the beam clamping devices or attachment to attachments.

The strength of the 90 degree welded corned assures that the clamped work piece will be maintained in a square fashion. The two sides of the device are individually welded to the bottom pieces well as being welded to each other.

The Bar Clamp Corner Squaring devices are easily stored and can be nested together to save space.